

XI. *On some Foraminifera from the Abrohlos Bank.* By HENRY B. BRADY, F.R.S.,  
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[PLATES XL.—XLVII.]

SEVERAL years ago a series of soundings from the Abrohlos Bank, taken during the cruise of H.M. Surveying-ship 'Plumper' in the month of May 1857, were placed in the hands of Prof. W. K. Parker for examination. The samples were small, as was always the case before the introduction of modern sounding-appliances, but they were found to contain Microzoa of fairly representative character; and arrangements were made by Professors Parker and Rupert Jones for the publication of the results obtained from their investigation. The necessary plates were drawn and lithographed by Mr. George West, funds for the purpose having been supplied by a grant from the Royal Society; but circumstances prevented the work being further proceeded with at that time, and it has since remained in abeyance. The preliminary examination of the material supplied the basis of three columns of one of the Supplementary Tables appended to Messrs. Parker and Jones's work on North-Atlantic and Arctic Foraminifera in the 'Philosophical Transactions' for 1865; but, beyond that, little or nothing has appeared in connection with the subject. The publication, in the interval, of numerous memoirs treating of recent Foraminifera, and notably the 'Report' by one of us upon the Foraminifera obtained by the 'Challenger' Expedition, has deprived the plates of some of their novelty; but though, beyond a few previously undescribed forms, they contain little that can now be regarded as new to science, the figures, which for the most part are very accurately drawn, often illustrate structural modifications of considerable interest; whilst collectively they form a series likely to be of service to the working naturalist. From another point of view, namely the distribution of species, they have also a definite value.

We propose to limit the present communication to a catalogue of the species, accompanied in certain cases by brief notes relating to their distribution, and to any peculiarities of structure exhibited by the specimens, together with such special points of interest as may have been observed in connection with them. More than this appears needless. In point of fact, the recently published 'Challenger' Report, to which allusion has been made, deals somewhat exhaustively with a very large proportion of the species in the Abrohlos collection, and it would be a waste of labour and of space to repeat descriptions and references already easily accessible. We have therefore omitted all lists of synonyms, matters connected with nomenclature, and the like,

preferring to give with each species a reference to the page at which such particulars are to be found in the 'Challenger' monograph.

Abrohlos Island, or Abrohlos Rocks, as it is sometimes set down in maps, is situated off the coast of South America, lat.  $17^{\circ} 53' S.$ , long.  $38^{\circ} 34' W.$ ; that is to say, approximately fifty miles from the mainland and about halfway down the eastern coast-line of Brazil—south of Bahia, a little south of Porto Seguro, and north of San Salvador. The "Bank" extends from Porto Seguro to Cape Frio; its length from N.E. to S.W. is 450 miles, its mid latitude  $20^{\circ} S.$ , and its average reach 80 miles off shore.

The material preserved was from eight soundings, ranging in depth from 940 fathoms to 31 fathoms. Particulars from the official log are given below, together with a general indication of the nature of the sea-bottom at the different points, the latter taken mainly from Prof. Parker's notes on the material before it was prepared for microscopical examination.

"No. 1. 17th May 1857, VIII. A.M.; Lat.  $19^{\circ} 32' S.$ , Long.  $37^{\circ} 51\frac{1}{2}' W.$ ; 940 fathoms; mud."

Whitish mud; about three fifths consisting of fine yellowish-brown clay, with a small quantity of very fine siliceous sand. Containing numerous Foraminifera of the usual *Globigerina*-ooze types, together with some, like *Amphistegina*, more at home in shallow water.

"No. 2. 17th May 1857, V. 20 P.M.; Lat.  $19^{\circ} 47' S.$ , Long.  $37^{\circ} 58' W.$ ; 31 fathoms; coral."

Fragments of Nullipore, with some fine sand. The chief organisms noticed were a *Cellepora* (on the Nullipore), three species of *Lepralia*, some small Gasteropods, and a number of Foraminifera, of which the more prominent belonged to the genera *Miliolina*, *Textularia*, *Discorbina*, and *Truncatulina*.

"No. 3. 17th May 1857, VIII. P.M.; Lat.  $19^{\circ} 51\frac{3}{4}' S.$ , Long.  $37^{\circ} 56' W.$ ; 32 fathoms; coral."

Chiefly fragments of *Eschara*; barren of Foraminifera.

"No. 4. 23rd May 1857, IX. 20 A.M.; Lat.  $22^{\circ} 54' S.$ , Long.  $40^{\circ} 37' W.$ ; 260 fathoms; mud."

Tenacious olive-brown clay, with a small percentage of fine siliceous sand, and some black grains. Contained fragments of Molluscan Shells and a few Polyzoa; together with Foraminifera of seventy species or more.

"No. 5. 23rd May 1857, VI. P.M.; Lat.  $23^{\circ} 0' S.$ , Long.  $40^{\circ} 48' W.$ ; 53 fathoms; coral."

Consisted mainly of Nullipore; no Foraminifera observed.

"No. 6. 23rd May 1857, IX. P.M. ; Lat. 23° 02' S., Long. 42° 02' W. ; 47 fathoms ; sand."

Sand, with some Molluscan Shells and Foraminifera, the latter principally *Discorbinae* and other common shallow-water forms.

"No. 7. 23rd May 1857, XI. 10 P.M. ; Lat. 23° 05' S., Long. 41° 12' W. ; 43 fathoms ; sand."

Presented a Rhizopod-fauna similar to No. 6, with the admixture of a few *Globigerinae* and *Pulvinulinae*.

"No. 8. 24th May 1857, I. 10 A.M. ; Lat. 23° 07' S., Long. 41° 57' W. ; 40 fathoms ; m. sh." (mud and shells).

About two fifths of the material consisted of a dark-grey clay with an olive tinge ; the remainder of fine quartz sand with some black grains and small stones. Amongst the organic constituents were Molluscan Shells and Polyzoa ; together with Foraminifera in considerable variety, between sixty and seventy species in all.

N.B.—The numbers of the soundings correspond with those on the chart (Pl. XLVII.) of the Abrohlos Bank showing the track of H.M. Surveying-ship 'Plumper,' May 1857.

### Subkingdom PROTOZOA.

#### Class RHIZOPODA.

#### Order FORAMINIFERA (RETICULARIA).

#### Family I. MILIOLIDÆ.

#### Subfamily MILIOLININÆ.

#### BILOCULINA, d'Orbigny.

1. BILOCULINA RINGENS, Lamarck, sp. (Plate XL. figs. 19, 20.)

*Biloculina ringens*, Chall. Report, p. 142, pl. 2. figs. 7, 8.

In four of the soundings ; the specimens small.

2. BILOCULINA DEPRESSA, d'Orbigny. (Plate XL. figs. 17, 18.)

*Biloculina depressa*, Chall. Report, p. 145, pl. 2. figs. 12, 15-17.

At 40 fathoms ; specimens small.

3. *BILOCULINA ELONGATA*, d'Orbigny. (Plate XL. figs. 21, 22.)

*Biloculina elongata*, Chall. Report, p. 144, pl. 2. fig. 9.

At 260 fathoms; specimens small.

4. *BILOCULINA IRREGULARIS*, d'Orbigny. (Plate XL. figs. 24, 26.)

*Biloculina irregularis*, Chall. Report, p. 140, pl. 1. figs. 17, 18.

A variable form. The test is of rounded contour, stoutly built, and subject to a certain amount of flattening in a direction at right angles to the usual plane of compression. It was first figured by d'Orbigny in his memoir on South-American Foraminifera (pl. viii. figs. 22-24). Rare, at 260 fathoms.

## SPIROLOCULINA, d'Orbigny.

5. *SPIROLOCULINA PLANULATA*, Lamarek, sp. (Plate XL. figs. 14, 15.)

*Spiroloculina planulata*, Chall. Report, p. 148, pl. 9. fig. 11.

Occurs in one sounding only, 40 fathoms. Some of the specimens (fig. 15) show a tendency to the external thickening of the sutural lines characteristic of *S. limbata*.

6. *SPIROLOCULINA ASPERULA*, Karrer. (Plate XL. figs. 28, 29.)

*Spiroloculina asperula*, Chall. Report, p. 152, pl. 8. figs. 13, 14.

The figures here given of this species are somewhat defective; they fail to render the granular or arenaceous condition of the test, which is a marked feature of the specimens. In the two deeper soundings; somewhat rare.

## MILIOLINA, Williamson.

7. *MILIOLINA SEMINULUM*, Linné, sp. (Plate XL. figs. 23, 31.)

*Miliolina seminulum*, Chall. Report, p. 157, pl. 5. fig. 6.

Small specimens of this common form occur at almost all the stations.

8. *MILIOLINA OBLONGA*, Montagu, sp. (Plate XL. fig. 27.)

*Miliolina oblonga*, Chall. Report, p. 160, pl. 5. fig. 4.

Small specimens, generally associated with the last-named species.

9. *MILIOLINA PYGMEA*, Reuss, sp. (?). (Plate XL. fig. 30.)

*Miliolina pygmaea*, Chall. Report, p. 163, pl. 113. fig. 16.

The figured specimen probably belongs to this species, but is not by any means a well-marked example. At Station IV.; 260 fathoms.

10. *MILIOLINA BICORNIS*, Walker and Jacob, sp. (Plate XL. fig. 25.)

*Miliolina bicornis*, Chall. Report, p. 171, pl. 6. figs. 9, 11, 12.

One or two poorly-shaped, feebly-corrugated specimens, well represented by the



figure, and assignable, with some reservation, to this species, occur at Station IV.; 260 fathoms.

11. *MILIOLINA EXCISA*, n. sp. (Plate XL. fig. 33.)

*Characters.* General form Quinqueloculine; segments much arched and inflated, the external margin of each presenting two salient ridges with well-marked crenulated depressions and obtuse-angled teeth. Length about  $\frac{1}{50}$  inch (0.5 millim.).

Occurs at Station II.; 31 fathoms.

Costa has figured a Quinqueloculine *Miliolina* with serrate margins from the Tertiary deposit of S. Alesandro in Southern Italy, under the name *Quinqueloculina denticulata* (Paleontologia del Regno di Napoli, p. 327, pl. xxv. fig. 6); and Reuss a somewhat similar variety, perhaps the same, as *Quinqueloculina plicatula*<sup>1</sup> (Sitzungsber. d. k. Akad. Wiss. Wien, 1867, vol. lv. p. 74, pl. iii. fig. 2); but in both of these the test is much compressed, the periphery thin and carinate, and in addition to the denticulation of the margin the lateral faces of the shell are more or less crenulated.

12. *MILIOLINA AGGLUTINANS*, d'Orbigny, sp. (Plate XL. figs. 34, 35.)

*Miliolina agglutinans*, Chall. Report, p. 180, pl. 8. figs. 6, 7.

Medium-sized specimens in four of the soundings; 40 to 260 fathoms.

13. *MILIOLINA TRICARINATA*, d'Orbigny, sp. (Plate XL. fig. 32.)

*Miliolina tricarinata*, Chall. Report, p. 165, pl. 3. fig. 17.

A few small specimens, at 40 fathoms.

Subfamily HAUERININÆ.

ARTICULINA, d'Orbigny.

14. *ARTICULINA SULCATA*, Reuss. (Plate XL. fig. 11.)

*Articulina sulcata*, Chall. Report, p. 183, pl. 12. figs. 12, 13.

The drawing represents a nearly typical specimen of *Articulina sulcata*; but whether that be an independent species or only an arrested form of *A. sagra*, d'Orbigny, is perhaps open to question. A single example from 940 fathoms. Reuss figures a precisely similar specimen from the Lower Tertiaries of Styria.

15. *ARTICULINA MULTILOCLARIS*, n. sp. (Plate XL. fig. 10.)

*Characters.* Test (earlier portion?) free, oval, compressed or complanate; composed of numerous segments arranged as in *Spiroloculina*; lateral faces of the segments flat or slightly hollowed, peripheral edge square or obtuse-angular; apertural end broad, margin everted, orifice simple. Length about  $\frac{1}{50}$  inch (0.5 millim.).

<sup>1</sup> Written *Quinqueloculina plicatella* on the plate.

The broad apertural end and simple orifice are sufficiently characteristic to mark this little shell as an *Articulina*; but whether a complete specimen or only the earlier portion of a dimorphous species, we are unable to say with any certainty; nor do we know of any described species with smooth exterior.

Found in the material from 31 fathoms.

16. *ARTICULINA CONICO-ARTICULATA*, Batsch, sp. (Plate XL. figs. 7-9.)

*Articulina conico-articulata*, Chall. Report, p. 185, pl. 12. figs. 17, 18; pl. 13. figs. 1, 2.

A few specimens, for the most part broken, in the sounding from 940 fathoms. There are very similar forms in Prof. Parker's collection, from a Tertiary marl at Baljik on the Black Sea. (Figures 5 and 6 are fragments of some larger organism probably not Foraminiferal.)

OPHTHALMIDIUM, Kübler.

17. *OPHTHALMIDIUM INCONSTANS*, Brady. (Plate XL. figs. 12, 13.)

*Ophthalmidium inconstans*, Chall. Report, p. 189, pl. 12. figs. 5, 6, 7.

Occurs only in the deepest sounding.

PLANISPIRINA, Seguenza.

18. *PLANISPIRINA EXIGUA*, Brady. (Plate XL. fig. 4.)

*Planispirina exigua*, Chall. Report, p. 196, pl. 12. figs. 1-4.

Only found, associated with the species last named, at 940 fathoms.

19. *PLANISPIRINA SIGMOIDEA*, Brady. (Plate XL. fig. 16.)

*Planispirina sigmoidea*, Chall. Report, p. 197, pl. 2. figs. 1-3.

A single specimen, at 940 fathoms.

Subfamily PENEROPLIDINÆ.

CORNUSPIRA, Schultze.

20. *CORNUSPIRA INVOLVENS*, Reuss. (Plate XL. figs. 1-3.)

*Cornuspira involvens*, Chall. Report, p. 200, pl. 11. figs. 1-3.

Found at three stations.

PENEROPLIS, Montfort.

21. *PENEROPLIS PERTUSUS*, Forskål, sp. (Plate XLII. figs. 18, 19.)

*Peneroplis pertusus*, Chall. Report, p. 204, pl. 13. fig. 17.

Some specimens present the more or less evolute nautiloid features of the typical *P. pertusus* (fig. 18); whilst others (fig. 19) are thicker and completely involute, and exhibit a tendency to produce the irregular aperture of the "Dendritine" forms.

Figure 19 *c* is a portion of the shell more highly magnified, to show the pitting of the inner surface.

Found only in the Nullipore-sand from 31 fathoms.

## Family II. ASTRORHIZIDÆ.

### Subfamily SACCAMMININÆ.

#### PSAMMOSPHERA, Schulze.

#### 22. PSAMMOSPHERA FUSCA, Schulze.

*Psammosphera fusca*, Chall. Report, p. 249, pl. 18. figs. 1-8.

We have no figure of this species. One or two smallish specimens were found in the sandy material from 47 fathoms.

### Subfamily RHABDAMMININÆ.

#### HYPERAMMINA, Brady.

#### 23. HYPERAMMINA RAMOSA, Brady. (Plate XLI. figs. 1-4, 13.)

*Hyperammina ramosa*, Chall. Report, p. 261, pl. 23. figs. 15-19.

Fragments only.

## Family III. LITUOLIDÆ.

### Subfamily LITUOLINÆ.

#### REOPHAX, Montfort.

#### 24. REOPHAX FUSIFORMIS, Williamson, sp. (Plate XLI. fig. 18.)

*Reophax fusiformis*, Chall. Report, p. 290, pl. 30. figs. 1-11.

From the sandy clay at 40 fathoms.

#### 25. REOPHAX SCORPIURUS, Montfort. (Plate XLI. fig. 10.)

*Reophax scorpiurus*, Chall. Report, p. 291, pl. 30. figs. 12-17.

Small examples, some of them built up of exceedingly coarse sand-grains, occur in the three deeper soundings.

Figure 16 may perhaps be assigned to the present or the last-named species; whilst the somewhat broken, rough, thick-shelled specimens, figs. 11, 12, and 15, probably belong to the spiral section of the Lituoline group, though too obscure for identification.

#### 26. REOPHAX PILULIFERA, Brady. (Plate XLI. figs. 5-8.)

*Reophax pilulifera*, Chall. Report, p. 292, pl. 30. figs. 18-20.

Rare, at 40 fathoms.

## HAPLOPHRAGMIUM, Reuss.

## 27. HAPLOPHRAGMIUM EMACIATUM, Brady.

*Haplophragmium emaciatum*, Chall. Report, p. 305, pl. 33. figs. 26-28.

Found sparingly in three or four of the soundings, but the specimens are small and not well characterized.

## 28. HAPLOPHRAGMIUM LATIDORSATUM, Bornemann, sp. (Plate XLI. figs. 14, 22.)

*Haplophragmium latidorsatum*, Chall. Report, p. 307, pl. 34. figs. 7-10, 14.

A few specimens of not very large size, at 260 fathoms.

## 29. HAPLOPHRAGMIUM CANARIENSE, d'Orbigny, sp. (Plate XLI. fig. 9.)

*Haplophragmium canariense*, Chall. Report, p. 310, pl. 35. figs. 1-5.

One or two small examples, at 260 fathoms.

## 30. HAPLOPHRAGMIUM NANUM, Brady. (Plate XLI. fig. 20.)

*Haplophragmium nanum*, Chall. Report, p. 311, pl. 35. figs. 6-8.

Rare, at 260 fathoms.

## PLACOPSILINA, d'Orbigny.

## 31. PLACOPSILINA CENOMANA, d'Orbigny. (Plate XLIII. fig. 13.)

*Placopsilina cenomana*, Chall. Report, p. 315, pl. 36. figs. 1-3.

A single specimen, at 31 fathoms.

## AMMODISCUS, Reuss.

## 32. AMMODISCUS GORDIALIS, Jones &amp; Parker, sp. (Plate XLII. fig. 22.)

*Ammodiscus gordialis*, Chall. Report, p. 333, pl. 38. figs. 7-9.

A few examples, at 260 fathoms; some of them approaching *A. charoides* in the compact disposition of the coils, as shown in the figure.

## TROCHAMMINA, Parker &amp; Jones.

## 33. TROCHAMMINA SQUAMATA, Jones &amp; Parker.

*Trochammina squamata*, Chall. Report, p. 337, pl. 41. fig. 3.

A doubtful specimen or two at 940 fathoms.

## WEBBINA, d'Orbigny.

## 34. WEBBINA CLAVATA, Jones &amp; Parker. (Plates XLII. fig. 21.)

*Webbina clavata*, Chall. Report, p. 349, pl. 41. figs. 12-16.

No complete specimens. The figure is that of the tube only, without the primordial chamber. Found at 260 fathoms.

## Family IV. TEXTULARIDÆ.

## Subfamily TEXTULARINÆ.

## TEXTULARIA, DeFrance.

35. TEXTULARIA SAGITTULA, DeFrance. (Plate XLII. fig. 1.)

*Textularia sagittula*, Chall. Report, p. 361, pl. 42. figs. 17, 18.

Occurs at almost all depths.

36. TEXTULARIA ABBREVIATA, d'Orbigny. (Plate XLII. figs. 4, 5.)

*Textularia abbreviata*, d'Orbigny, 1846, For. Foss. Vien. p. 249, pl. 15. figs. 9-12.

Many of the specimens in the fistulose condition, fig. 4.

37. TEXTULARIA AGGLUTINANS, d'Orbigny. (Plate XII. figs. 17, 23; Plate XLII. figs. 2, 3.)

*Textularia agglutinans*, Chall. Report, p. 363, pl. 43. figs. 1-3.

In all the shallower soundings.

## VERNEULINA, d'Orbigny.

38. VERNEULINA SPINULOSA, Reuss. (Plate XLII. figs. 14, 15.)

*Verneulina spinulosa*, Chall. Report, p. 384, pl. 47. figs. 1-3.

Generally distributed.

## GAUDRYINA, d'Orbigny.

39. GAUDRYINA PUPOIDES, d'Orbigny. (Plate XLII. figs. 7, 8.)

*Gaudryina pupoides*, Chall. Report, p. 378, pl. 46. figs. 1-4.

40. GAUDRYINA PUPOIDES, var. CHILOSTOMA, Reuss. (Plate XLII. fig. 9.)

*Gaudryina pupoides*, var. *chilostoma*, Chall. Report, p. 379, pl. 46. figs. 5, 6.

Both of these forms occur at Station IV., 260 fathoms.

41. GAUDRYINA SIPHONELLA, Reuss.

*Gaudryina siphonella*, Chall. Report, p. 382, pl. 46. figs. 17-19.

Only at the greatest depth, 940 fathoms.

42. GAUDRYINA FILIFORMIS, Berthelin. (Plate XLII. fig. 6.)

*Gaudryina filiformis*, Chall. Report, p. 380, pl. 46. fig. 12.

A single specimen at 260 fathoms.



## VALVULINA, d'Orbigny.

43. VALVULINA CONICA, Parker & Jones. (Plate XLI. fig. 21; Plate XLII. figs. 16, 17.)  
*Valvulina conica*, Chall. Report, p. 392, pl. 49. figs. 15, 16.

Found at 260 fathoms.

## CLAVULINA, d'Orbigny.

44. CLAVULINA COMMUNIS, d'Orbigny. (Plate XLII. fig. 11.)  
*Clavulina communis*, Chall. Report, p. 394, pl. 48. figs. 1-13.

The figured specimen, the only one met with, is manifestly incomplete, having lost the terminal segment, or possibly more than one.

45. CLAVULINA PARIISIENSIS, d'Orbigny. (Plate XLII. figs. 10, 12.)  
*Clavulina parisiensis*, Chall. Report, p. 395, pl. 48. figs. 14-18.

Not unfrequent in some of the shallower soundings.

## Subfamily BULIMININÆ.

## BULIMINA, d'Orbigny.

46. BULIMINA MARGINATA, d'Orbigny. (Plate XLIII. figs. 7, 10.)  
*Bulimina marginata*, Chall. Report, p. 405, pl. 51. figs. 3-5.

47. BULIMINA ACULEATA, d'Orbigny. (Plate XLIII. fig. 8.)  
*Bulimina aculeata*, Chall. Report, p. 406, pl. 51. figs. 7-9.

48. BULIMINA INFLATA, Seguenza. (Plate XLIII. fig. 9.)  
*Bulimina inflata*, Chall. Report, p. 406, pl. 51. figs. 10-13.

These three closely related forms are found in company at Stations IV. and VIII., the first two also at Station VII.

49. BULIMINA PUPOIDES, d'Orbigny.  
*Bulimina pupoides*, Chall. Report, p. 400, pl. 50. fig. 15.

A few poor specimens of this species were met with in the material from 40 fathoms.

## VIRGULINA, d'Orbigny.

50. VIRGULINA SCHREIBERSIANA, Czjzek.  
*Virgulina schreibersiana*, Chall. Report, p. 414, pl. 52. figs. 1-3.

Rare, at 940 fathoms.

## BOLIVINA, d'Orbigny.

## 51. BOLIVINA PUNCTATA, d'Orbigny.

*Bolivina punctata*, Chall. Report, p. 417, pl. 52. figs. 18, 19.

## 52. BOLIVINA PLICATA, d'Orbigny.

*Bolivina plicata*, d'Orbigny, 1839, Foram. Amér. Mérid. p. 63, pl. 8. figs. 10-12.

## 53. BOLIVINA TEXTILARIOIDES, Reuss. (Plate XLIII. fig. 1.)

*Bolivina textilarioides*, Chall. Report, p. 419, pl. 52. figs. 22-25.

## 54. BOLIVINA DILATATA, Reuss. (Plate XLIII. figs. 3, 6.)

*Bolivina dilatata*, Chall. Report, p. 418, pl. 52. figs. 20, 21.

## 55. BOLIVINA ÆNARIENSIS, Costa, sp. (Plate XLIII. figs. 2, 4, 5.)

*Bolivina ænariensis*, Chall. Report, p. 423, pl. 52. figs. 10, 11.

These *Bolivina* are present in considerable numbers in the two deeper soundings, and also in the sandy clay from 40 fathoms. At Station VII. the genus is only represented by *B. plicata*, and is entirely wanting at Stations II. and VI.

## Subfamily CASSIDULININÆ.

## CASSIDULINA, d'Orbigny.

## 56. CASSIDULINA LÆVIGATA, d'Orbigny. (Plate XLIII. fig. 11.)

*Cassidulina levigata*, Chall. Report, p. 428, pl. 54. figs. 1-3.

Specimens of average size in the two deep soundings and at Station VIII.

## 57. CASSIDULINA SUBGLOBOSA, Brady. (Plate XLIII. figs. 12-14.)

*Cassidulina subglobosa*, Chall. Report, p. 430, pl. 54. fig. 17.

At 260 fathoms, and in two of the shallower soundings.

## Family V. LAGENIDÆ.

## Subfamily LAGENINÆ.

## LAGENA, Walker &amp; Boys.

## 58. LAGENA GLOBOSA, Montagu, sp.

*Lagena globosa*, Chall. Report, p. 452, pl. 56. figs. 1-3.

At 260 fathoms.

59. *LAGENA SULCATA*, Walker & Jacob. (Plate XLIV. figs. 18, 22, 34. Var. *ACUTICOSTA*, Reuss, figs. 26, 31.)

*Lagena sulcata*, Chall. Report, p. 462, pl. 57. figs. 23, 33, &c.

Figures 18, 22, and 34 represent typical specimens, the latter two being the mucronate form of test. Figures 26 and 31 might with equal justice be assigned to *Lagena acuticosta*, Reuss (Chall. Report, p. 464, pl. 57. figs. 31, 32, &c.), a variety only separable by comparative characters of little zoological value, depending upon the number and degree of development of the costæ.

60. *LAGENA STRIATA*, d'Orbigny. (Plate XLIV. fig. 28.)

*Lagena striata*, Chall. Report, p. 460, pl. 57. figs. 22, 24, &c.

At 260 fathoms.

61. *LAGENA LINEATA*, Williamson, sp. (Plate XLIV. fig. 33.)

*Lagena lineata*, Chall. Report, p. 461, pl. 57. fig. 13.

This little shell, a solitary specimen, may perhaps most aptly be treated as a compressed modification of Williamson's species.

62. *LAGENA MELO*, d'Orbigny, sp. (Plate XLIV. figs. 21, 24, 25 (?).)

*Oolina melo*, d'Orbigny, 1839, Foram. Amér. Mérid. p. 20, pl. 5. fig. 9.

*Lagena melo*, Chall. Report, p. 446.

D'Orbigny's figure of this species, *loc. cit.*, is that of a pyriform entosolenian *Lagena* with an exogenous surface-reticulation, of which the longitudinal and transverse bands are of the same thickness and elevation. Such specimens are comparatively rare. On the other hand, shells with strong longitudinal ridges and slender transverse bands, as represented in fig. 21, are tolerably frequent. Figure 24 shows some approach to the form of ornament found in *L. hexagona*, Will., sp.

63. *LAGENA LEVIGATA*, Reuss, sp.

*Lagena levigata*, Chall. Report, p. 473, pl. 114. fig. 8.

At 260 fathoms.

64. *LAGENA MARGINATA*, Walker & Boys, sp. (Plate XLIV. figs. 27, 29, 30, 32.)

*Lagena marginata*, Chall. Report, p. 476, pl. 59. figs. 21-33.

Generally distributed.

65. *LAGENA ORBIGNYANA*, Seguenza, sp. (Plate XLIV. fig. 20.)

*Lagena orbignyana*, Chall. Report, p. 484, pl. 59. figs. 24-26, &c.

In the two deep soundings.

66. *LAGENA LAGENOIDES*, Williamson, sp. (Plate XLIV. fig. 23.)

*Lagena lagenoides*, Chall. Report, p. 479, pl. 60. figs. 12-14, &c.

The figured specimen shows the tubulation of the wing much more distinctly than given in the drawing; it has also an incipient ridge on each side of the shoulder, like that of young examples of *L. formosa*. In the deeper soundings; very rare.

#### Subfamily NODOSARINÆ.

##### NODOSARIA, Lamarck.

67. *NODOSARIA CALOMORPHA*, Reuss. (Plate XLIV. fig. 1; and fig. 4?)

*Nodosaria calomorpha*, Chall. Report, p. 497, pl. 61. figs. 23-27.

One or two specimens at 260 fathoms.

68. *NODOSARIA PYRULA*, d'Orbigny. (Plate XLIV. fig. 2.)

*Nodosaria pyrula*, Chall. Report, p. 497, pl. 62. figs. 10-12.

Fragments only.

69. *NODOSARIA (DENTALINA) MUCRONATA*, Neugeboren, sp. (Plate XLIV. fig. 10.)

*Nodosaria (Dentalina) mucronata*, Chall. Report, p. 506, pl. 62. figs. 27-29.

This form is perhaps better known under d'Orbigny's name, *Nodosaria (Dentalina) obliqua* (Modèle, no. 5). Found at 40 fathoms; rare.

70. *NODOSARIA OBLIQUA*, Linné, sp. (Plate XLIV. fig. 7.)

*Nodosaria obliqua*, Chall. Report, p. 513, pl. 64. figs. 20-22.

At Station VII., 43 fathoms; rare.

71. *NODOSARIA SCALARIS*, Batsch, sp. (Plate XLIV. fig. 6; and fig. 19?)

*Nodosaria scalaris*, Chall. Report, p. 510, pl. 63. figs. 28-31.

At 260 fathoms and less.

72. *NODOSARIA HISPIDA*, d'Orbigny. (Plate XLIV. figs. 3, 5.)

*Nodosaria hispida*, Chall. Report, p. 507, pl. 63. figs. 12-16.

At 260 fathoms; one or two fragments only, as figured.

##### RHABDOGONIUM, Reuss.

73. *RHABDOGONIUM TRICARINATUM*, d'Orbigny, sp. (Plate XLV. fig. 3.)

*Rhabdognium tricarinatum*, Chall. Report, p. 525, pl. 67. figs. 1-3.

Tolerably frequent at Stations IV. and VIII.

## CRISTELLARIA, Lamarck.

74. CRISTELLARIA CREPIDULA, Fichtel & Moll, sp. (Plate XLIV. figs. 8, 9.)  
*Cristellaria crepidula*, Chall. Report, p. 542, pl. 67. figs. 17, 19, 20, &c.  
 Small and rare; Stations IV. and VIII.
75. CRISTELLARIA ROTULATA, Lamarck, sp. (Plate XLIV. fig. 15.)  
*Cristellaria rotulata*, Chall. Report, p. 547, pl. 69. fig. 13.  
 At 260 fathoms and less.  
 A somewhat anomalous *Cristellaria* of the compressed type, of comparatively minute size, and subcarinate, is represented by fig. 17. It is difficult to say with any certainty to what species it should be assigned.
76. CRISTELLARIA CULTRATA, Montfort, sp. (Plate XLIV. fig. 13.)  
*Cristellaria cultrata*, Chall. Report, p. 550, pl. 70. figs. 4-8.  
 A few specimens only, mostly broken.
77. CRISTELLARIA CALCAR, Linné, sp. (Plate XLIV. fig. 14.)  
*Cristellaria calcar*, Chall. Report, p. 551, pl. 70. figs. 9-15.  
 Rare, at 40 fathoms.
78. CRISTELLARIA CASSIS, Fichtel & Moll, sp. (Plate XLIV. fig. 16.)  
*Cristellaria cassis*, Chall. Report, p. 552, pl. 68. fig. 10.  
 A broken specimen at 40 fathoms.
79. CRISTELLARIA VARIABILIS, Reuss. (Plate XLIV. fig. 12.)  
*Cristellaria variabilis*, Chall. Report, p. 541, pl. 68. figs. 11-16.  
 Rare, at Stations IV. and VIII.

## Subfamily POLYMORPHININÆ.

## POLYMORPHINA, d'Orbigny.

80. POLYMORPHINA LACTEA, Walker & Jacob, sp. (Plate XLIV. fig. 11.)  
*Polymorphina lactea*, Chall. Report, p. 559, pl. 71. figs. 11, 14.  
 Very small and rare, at Station VIII.

## UVIGERINA, d'Orbigny.

81. UVIGERINA PYGMÆA, d'Orbigny. (Plate XLV. figs. 1, 2.)  
*Uvigerina pygmæa*, Chall. Report, p. 575, pl. 74. figs. 11-14.



82. *UVIGERINA ASPERULA*, Czjzek. (Plate XLV. figs. 4, 5.)

*Uvigerina asperula*, Chall. Report, p. 578, pl. 75. figs. 6-8.

These two species of *Uvigerina* are moderately common at Stations IV., VII., and VIII., and the specimens are of average size.

SAGRINA, Parker & Jones (d'Orbigny?).

83. *SAGRINA DIMORPHA*, Parker & Jones. (Plate XLV. fig. 6).

*Sagrina dimorpha*, Chall. Report, p. 582, pl. 76. figs. 1-3.

A couple of good specimens from 260 fathoms.

#### Family VI. GLOBIGERINIDÆ.

GLOBIGERINA, d'Orbigny.

84. *GLOBIGERINA BULLOIDES*, d'Orbigny. (Plate XLV. fig. 15.)

*Globigerina bulloides*, Chall. Report, p. 593, pl. 79. figs. 3-7, &c.

Generally distributed.

85. *GLOBIGERINA RUBRA*, d'Orbigny. (Plate XLV. fig. 12.)

*Globigerina rubra*, Chall. Report, p. 602, pl. 79. figs. 11-16.

Generally distributed.

86. *GLOBIGERINA CONGLOBATA*, Brady. (Plate XLV. fig. 13.)

*Globigerina conglobata*, Chall. Report, p. 603, pl. 80. figs. 1-5, &c.

Generally distributed.

87. *GLOBIGERINA SACCULIFERA*, Brady.

*Globigerina sacculifera*, Chall. Report, p. 604, pl. 80. figs. 11-17, &c.

Occurs in the two deep soundings and at Station VIII.

88. *GLOBIGERINA ÆQUILATERALIS*, Brady.

*Globigerina æquilateralis*, Chall. Report, p. 605, pl. 80. figs. 18-21.

Found over the same area as the last-named form, but much more sparsely scattered.

ORBULINA, d'Orbigny.

89. *ORBULINA UNIVERSA*, d'Orbigny. (Plate XLV. figs. 7, 8, 14.)

*Orbulina universa*, Chall. Report, p. 608, pl. 78. figs. 8-26, &c.

The large orifice in fig. 7 and perhaps also that in fig. 8 are the results of accident,

and probably due to the enlargement by external means of one of the normal pores of the shell. Such orifices, not at all uncommon in dead shells, though seldom quite so round and regularly shaped as those of the drawings, were regarded by d'Orbigny and many subsequent authors as the general aperture. Figure 8 is a double specimen (see Chall. Report, *loc. cit.*). Generally distributed.

PULLENIA, Parker & Jones.

90. PULLENIA SPHÆROIDES, d'Orbigny, sp. (Plate XLIII. figs. 21, 24.)  
*Pullenia spheroides*, Chall. Report, p. 616, pl. 84. figs. 12, 13.  
 At 260 fathoms and 40 fathoms.

91. PULLENIA QUINQUELOBA, Reuss. (Plate XLIII. figs. 22, 23.)  
*Pullenia quinqueloba*, Chall. Report, p. 617, pl. 84. figs. 14, 15.  
 At 260 fathoms.

SPHÆROIDINA, d'Orbigny.

92. SPHÆROIDINA BULLOIDES, d'Orbigny. (Plate XLV. figs. 9, 10, 11.)  
*Sphæroidina bulloides*, Chall. Report, p. 620, pl. 84. figs. 1-7.  
 In the two deeper soundings only.

Family VII. ROTALIDÆ.

Subfamily ROTALINÆ.

CYMBALOPORA, Hagenow.

93. CYMBALOPORA POEYI, d'Orbigny, sp. Var. (Plate XLVI. fig. 12.)  
*Cymbalopora poeyi*, Chall. Report, p. 636, pl. 102. fig. 13.

The specimens, as may be seen by the figure, are by no means typical. Instead of the normal, compact, subconical shell, the test is slightly convex or depressed, and the segments are comparatively few in number, thin-walled, and much inflated. Examples with these characters are moderately common at 940 fathoms.

DISCORBINA, Parker & Jones.

94. DISCORBINA GLOBULARIS, d'Orbigny, sp. (Plate XLVI. fig. 6.)  
*Discorbina globularis*, Chall. Report, p. 643, pl. 86. figs. 8-13.  
 A few poor specimens in the shallower soundings.
95. DISCORBINA ROSACEA, d'Orbigny, sp.  
*Discorbina rosacea*, Chall. Report, p. 644, pl. 87. figs. 1-4.

## 96. DISCORBINA VILARDEBOANA, d'Orbigny, sp.

*Discorbina vilardeboana*, Chall. Report, p. 645, pl. 86. figs. 9-12, &c.

A few specimens of *Discorbina rosacea* were found in the soundings at 31 fathoms, and two or three shells of the slightly dissimilar form known as *D. vilardeboana* at 47 fathoms.

## 97. DISCORBINA ORBICULARIS, Terquem, sp. (Plate XLVI. fig. 1.)

*Discorbina orbicularis*, Chall. Report, p. 647, pl. 88. figs. 4-8.

A few good examples at Station VI.; 47 fathoms.

## 98. DISCORBINA BERTHELOTI, d'Orbigny, sp. (Plate XLVI. figs. 7, 8.)

*Discorbina bertheloti*, Chall. Report, p. 650, pl. 89. figs. 10-12.

This species in its comparative abundance appears almost to replace its isomorph *Truncatulina lobatula* in some of the shallower soundings.

## 99. DISCORBINA RARESCENS, Brady.

*Discorbina rarescens*, Chall. Report, p. 651, pl. 90. figs. 2, 3.

Rare; 260 fathoms.

## PLANORBULINA, d'Orbigny.

## 100. PLANORBULINA MEDITERRANENSIS, d'Orbigny. (Plate XLV. fig. 18.)

*Planorbulina mediterraneensis*, Chall. Report, p. 656, pl. 92. figs. 1-3.

One or two specimens only, at 47 fathoms.

## 101. PLANORBULINA ACERVALIS, Brady. (Plate XLVI. fig. 11.)

*Planorbulina acervalis*, Chall. Report, p. 657, pl. 92. fig. 4.

Rare; 260 fathoms.

## TRUNCATULINA, d'Orbigny.

## 102. TRUNCATULINA LOBATULA, Walker &amp; Jacob, sp. (Plate XLII. fig. 20; Plate XLV. fig. 26.)

*Truncatulina lobatula*, Chall. Report, p. 660, pl. 92. figs. 10, &c.

Does not occur at the greatest depth; otherwise generally diffused, but not abundant. The broken Rotaline shell, fig. 16, of Plate XLV., appears to belong to this or some allied species of *Truncatulina*.

The adherent specimen, Plate XLII. fig. 20, shows the remains of the sandy envelope which often completely encases the shell of *Tr. lobatula* in the parasitic condition.

## 103. TRUNCATULINA VARIABILIS, d'Orbigny. (Plate XLV. fig. 17.)

*Truncatulina variabilis*, Chall. Report, p. 661, pl. 93. figs. 6, 7.

Rare; 260 fathoms.

## 104. TRUNCATULINA MUNDULA, n. sp. (Plate XLV. fig. 25.)

*Characters.* Test free, rotaliform; composed of about three convolutions, which are evolute on the superior and completely involute on the inferior side, the outermost whorl of the adult shell consisting of from ten to twelve segments. Superior face slightly convex or subconical, generally coarsely perforate, the sutures and periphery marked by thickening of the chamber-walls; inferior face convex, sometimes a little depressed at the umbilicus; perforation inconspicuous; sutures slightly excavated or marked by fine lines only. Diameter  $\frac{1}{60}$  inch (0.42 millim.).

This is a compact, neatly made variety of *Truncatulina* that has not hitherto, so far as we are aware, received a name. Morphologically its place is near *Tr. haidingerii*, or between that species and *Tr. ungeriana*; but it is less stoutly built than the former species and has nearly double the number of chambers in each convolution. Its nearest isomorph is perhaps *Pulvinulina karsteni*.

Common at 260 fathoms.

## 105. TRUNCATULINA RETICULATA, Czjzek, sp. (Plate XLV. figs. 23, 24.)

*Truncatulina reticulata*, Chall. Report, p. 669, pl. 96. figs. 5-8.

Tolerably abundant at three stations.

## ANOMALINA, d'Orbigny.

## 106. ANOMALINA ARIMINENSIS, d'Orbigny, sp. (Plate XLV. figs. 20, 21, 22.)

*Anomalina ariminensis*, Chall. Report, p. 674, pl. 93. figs. 10, 11.

Generally distributed.

## 107. ANOMALINA AMMONOIDES, Reuss, sp. (Plate XLV. fig. 19.)

*Anomalina ammonoides*, Chall. Report, p. 672, pl. 94. figs. 2, 3.

Associated with *A. ariminensis* in the two deeper soundings

## PULVINULINA, Parker &amp; Jones.

## 108. PULVINULINA ELEGANS, d'Orbigny, sp. (Plate XLVI. fig. 2.)

*Pulvinulina elegans*, Chall. Report, p. 699, pl. 105. figs. 4-6.

Small specimens, both of the deep-water (*P. partschiana*) and shallow-water forms.

## 109. PULVINULINA SCHREIBERSII, d'Orbigny, sp. (Plate XLVI. fig. 4.)

*Pulvinulina schreibersii*, Chall. Report, p. 697, pl. 115. fig. 1.

Of medium size, at 43 fathoms and 47 fathoms.

## 110. PULVINULINA MENARDII, d'Orbigny, sp. (Plate XLVI. fig. 3.)

*Pulvinulina menardii*, Chall. Report, p. 690, pl. 103. figs. 1, 2.

## 111. PULVINULINA TUMIDA, Brady.

*Pulvinulina tumida*, Chall. Report, p. 692, pl. 103. figs. 4-6.

## 112. PULVINULINA CRASSA, d'Orbigny, sp.

*Pulvinulina crassa*, Chall. Report, p. 694, pl. 103. figs. 11, 12.

## 113. PULVINULINA MICHELINIANA, d'Orbigny, sp. (Plate XLVI. figs 9, 10.)

*Pulvinulina micheliniana*, Chall. Report, p. 694, pl. 104. figs. 1, 2.

These four species, the most important of the pelagic group of *Pulvinulinae*, are pretty generally distributed, *P. crassa* being the least common.

## 114. PULVINULINA OBLONGA, Williamson, sp. (Plate XLVI. fig. 5.)

*Pulvinulina oblonga*, Chall. Report, p. 688, pl. 106. fig. 4.

In two of the shallower soundings only.

## ROTALIA, Lamarck.

## 115. ROTALIA SOLDANII, d'Orbigny.

*Rotalia soldanii*, Chall. Report, p. 706, pl. 107. figs. 6, 7.

An essentially deep-water species, observed only in the material from 940 fathoms.

## Subfamily TINOPORINÆ.

## GYPSINA, Carter.

## 116. GYPSINA GLOBULUS, Reuss, sp. (Plate XLVI. fig. 13.)

*Gypsina globulus*, Chall. Report, p. 717, pl. 101. fig. 8.

At 30 fathoms; rare.

## 117. GYPSINA INHÆRENS, Schultze, sp. (Plate XLI. fig. 19.)

*Gypsina inhærens*, Chall. Report, p. 718, pl. 102. figs. 1-6.

Incrusting coral and nullipore, at 31 fathoms.

## Family VIII. NUMMULINIDÆ.

## Subfamily POLYSTOMELLINÆ.

## NONIONINA, d'Orbigny.

## 118. NONIONINA DEPRESSULA, Walker &amp; Jacob, sp. (Plate XLIII. fig. 25.)

*Nonionina depressula*, Chall. Report, p. 725, pl. 109. figs. 6, 7.

A few specimens at Station IV.; 260 fathoms.



119. *NONIONINA EXPONENS*, n. sp. (Plate XLIII. fig. 16.)

*Characters.* Test free, equilateral, planospiral; lateral faces convex or somewhat flattened, peripheral edge rounded; composed of from two to three convolutions, all more or less visible on both sides of the shell, the final whorl consisting of about seven or eight segments; margin entire; septa marked by fine lines, without superficial depressions. Diameter  $\frac{1}{10}$  inch (0.25 millim.).

A form somewhat allied to *N. depressula*, but differing from that species in its evolute mode of growth, its even sutures, and non-inflated segments. Obtained from the sounding at Station I.; 940 fathoms.

120. *NONIONINA UMBILICATULA*, Montagu, sp. (Plate XLIII. fig. 19.)

*Nonionina umbilicatulæ*, Chall. Report, p. 726, pl. 109. figs. 8, 9.

Specimens of average dimensions, at four stations.

121. *NONIONINA SCAPHA*, Fichtel & Moll. (Plate XLIII. fig. 20.)

*Nonionina scapha*, Chall. Report, p. 730, pl. 109. figs. 14-16.

A very few examples at Stations IV. and VIII., of small size, and too thin to be quite typical.

## POLYSTOMELLA, Lamarck.

122. *POLYSTOMELLA STRIATOPUNCTATA*, Fichtel & Moll, sp. (Plate XLIII. fig. 17.)

*Polystomella striatopunctata*, Chall. Report, p. 733, pl. 109. figs. 22, 23.

Not uncommon in the forty-fathom sounding.

123. *POLYSTOMELLA*, sp. ? (Plate XLIII. fig. 18.)

A single worn and doubtful specimen, from 47 fathoms, of which it is not easy to say whether it is a true *Polystomella* or an overgrown *Nonionina*.

## Subfamily NUMMULITINÆ.

## AMPHISTEGINA, d'Orbigny.

124. *AMPHISTEGINA LESSONII*, d'Orbigny. (Plate XLIII. fig. 15.)

*Amphistegina lessonii*, Chall. Report, p. 740, pl. 111. figs. 1-7.

Small specimens, tolerably common in the deepest and the shallowest soundings, but not observed in any of the others.

Table of the Distribution of the Foraminifera in Six Soundings on the Abrohlos Bank. See Plate XLVII.

	I.	II.	IV.	VI.	VII.	VIII.
	940 fths.	31 fths.	290 fths.	47 fths.	43 fths.	40 fths.
1. <i>Biloculina ringens</i> , <i>Lamk.</i> , sp. . . . .			*	*	*	*
2. ——— <i>depressa</i> , <i>d'Orb.</i> . . . . .						*
3. ——— <i>elongata</i> , <i>d'Orb.</i> . . . . .			*			
4. ——— <i>irregularis</i> , <i>d'Orb.</i> . . . . .			*			
5. <i>Spiroloculina planulata</i> , <i>Lamk.</i> , sp. . . . .						*
6. ——— <i>asperula</i> , <i>Karrer</i> . . . . .			*			
7. <i>Miliolina seminulum</i> , <i>Linné</i> , sp. . . . .	*	*		*	*	*
8. ——— <i>oblonga</i> , <i>Montag.</i> , sp. . . . .	*	*	*		*	*
9. ——— <i>pygmaea</i> , <i>Reuss</i> , sp. . . . .			*			
10. ——— <i>bicornis</i> , <i>W. &amp; J.</i> , sp. (?) . . . . .			*			
11. ——— <i>excisa</i> , n. sp. . . . .		*				
12. ——— <i>agglutinans</i> , <i>d'Orb.</i> , sp. . . . .			*	*	*	*
13. ——— <i>tricarinata</i> , <i>d'Orb.</i> , sp. . . . .						*
14. <i>Articulina sulcata</i> , <i>Reuss</i> . . . . .	*					
15. ——— <i>multilocularis</i> , n. sp. . . . .		*				
16. ——— <i>conico-articulata</i> , <i>Batsch</i> , sp. . . . .	*					
17. <i>Ophthalmidium inconstans</i> , <i>Brady</i> . . . . .	*					
18. <i>Planispirina exigua</i> , <i>Brady</i> . . . . .	*					
19. ——— <i>sigmoidea</i> , <i>Brady</i> . . . . .	*					
20. <i>Cornuspira involvens</i> , <i>Reuss</i> . . . . .	*	*	*			
21. <i>Peneroplis pertusus</i> , <i>Forsk.</i> , sp. . . . .		*				
22. <i>Psammospaera fusca</i> , <i>Schulze</i> . . . . .				*		
23. <i>Hyperammina ramosa</i> , <i>Brady</i> . . . . .			*			*
24. <i>Reophax fusiformis</i> , <i>Will.</i> , sp. . . . .						*
25. ——— <i>scorpiurus</i> , <i>Montfort</i> . . . . .	*		*	*		
26. ——— <i>pilulifera</i> , <i>Brady</i> . . . . .						*
27. <i>Haplophragmium emaciatum</i> , <i>Brady</i> . . . . .	?		*		*	*
28. ——— <i>latidorsatum</i> , <i>Bornem.</i> , sp. . . . .			*		?	
29. ——— <i>canariense</i> , <i>d'Orb.</i> , sp. . . . .			*			*
30. ——— <i>nanum</i> , <i>Brady</i> . . . . .			*			
31. <i>Placopsilina cenomana</i> , <i>d'Orb.</i> . . . . .		*				
32. <i>Ammodiscus gordialis</i> , <i>J. &amp; P.</i> , sp. . . . .			*			
33. <i>Trochammina squamata</i> , <i>J. &amp; P.</i> . . . . .	*?					
34. <i>Webbina clavata</i> , <i>J. &amp; P.</i> . . . . .			*			
35. <i>Textularia sagittula</i> , <i>Defr.</i> . . . . .	*	*		*	*	*
36. ——— <i>abbreviata</i> , <i>d'Orb.</i> . . . . .	*	*		*	*	*
37. ——— <i>agglutinans</i> , <i>d'Orb.</i> . . . . .		*		*	*	*
38. <i>Verneuilina spinulosa</i> , <i>Reuss</i> . . . . .	*	*	*	*		
39. <i>Gandryina pupoides</i> , <i>d'Orb.</i> . . . . .			*			
40. ———, var. <i>chilostoma</i> , <i>Reuss</i> . . . . .			*			
41. ——— <i>siphonella</i> , <i>Reuss</i> . . . . .	*					
42. ——— <i>filiformis</i> , <i>Berthelin</i> . . . . .			*			
43. <i>Valvulina conica</i> , <i>P. &amp; J.</i> . . . . .				*		
44. ——— <i>communis</i> , <i>d'Orb.</i> . . . . .			*			*
45. ——— <i>parisiensis</i> , <i>d'Orb.</i> . . . . .		*			*	*
46. <i>Bulimina marginata</i> , <i>d'Orb.</i> . . . . .			*		*	*
47. ——— <i>aculeata</i> , <i>d'Orb.</i> . . . . .			*		*	*
48. ——— <i>inflata</i> , <i>Seg.</i> . . . . .			*		*	*
49. ——— <i>pupoides</i> , <i>d'Orb.</i> . . . . .					*	*

Table of Distribution (continued).

	I. 940 fths.	II. 31 fths.	IV. 260 fths.	VI. 47 fths.	VII. 43 fths.	VIII. 40 fths.
50. <i>Virgulina schreibersiana</i> , Czj. ....	*					
51. <i>Bolivina punctata</i> , d'Orb. ....	*		*			
52. ——— <i>plicata</i> , d'Orb. ....	*				*	*
53. ——— <i>textilarioides</i> , Reuss .....			*			*
54. ——— <i>dilatata</i> , Reuss .....	*		*			*
55. ——— <i>anariensis</i> , Costa, sp. ....			*			*
56. <i>Cassidulina lævigata</i> , d'Orb. ....	*		*			*
57. ——— <i>subglobosa</i> , Brady .....			*		*	*
58. <i>Lagena globosa</i> , Montag., sp. ....			*			
59. ——— <i>sulcata</i> , W. & J. ....			*			
60. ——— <i>striata</i> , d'Orb., sp. ....			*			*
61. ——— <i>lineata</i> , Will., sp. ....			*			*
62. ——— <i>melo</i> , d'Orb., sp. ....			*			
63. ——— <i>lævigata</i> , Reuss, sp. ....	*		*			
64. ——— <i>marginata</i> , W. & B., sp. ....	*	*	*			*
65. ——— <i>orbignyana</i> , Seg., sp. ....	*		*			
66. ——— <i>lagenoides</i> , Will., sp. ....	*		*			
67. <i>Nodosaria calomorpha</i> , Reuss .....			*			
68. ——— <i>pyrula</i> , d'Orb. ....				*		
69. ——— ( <i>Dentalina</i> ) <i>mucronata</i> , Neugeb., sp. ....						*
70. ——— <i>obliqua</i> , Linné, sp. ....					*	
71. ——— <i>scalaris</i> , Batsch, sp. ....			*	*		*
72. ——— <i>hispida</i> , d'Orb. ....			*			
73. <i>Rhabdogonium tricaratum</i> , d'Orb., sp. ....			*			*
74. <i>Cristellaria crepidula</i> , F. & M., sp. ....			*			*
75. ——— <i>rotulata</i> , Lamk., sp. ....			*	*	*	*
76. ——— <i>cultrata</i> , Montf., sp. ....			*		*	*
77. ——— <i>calcar</i> , Linné, sp. ....			*		*	*
78. ——— <i>cassis</i> , F. & M., sp. ....					*	*
79. ——— <i>variabilis</i> , Reuss .....			*		*	*
80. <i>Polymorphina lactea</i> , W. & J., sp. ....			*		*	*
81. <i>Uvigerina pygmaea</i> , d'Orb. ....			*		*	*
82. ——— <i>asperula</i> , Czj. ....			*		*	*
83. <i>Sagrina dimorpha</i> , P. & J. ....			*			
84. <i>Globigerina bulloides</i> , d'Orb. ....	*		*	*	*	*
85. ——— <i>rubra</i> , d'Orb. ....	*		*	*	*	*
86. ——— <i>conglobata</i> , Brady .....	*		*		*	*
87. ——— <i>sacculifera</i> , Brady .....	*		*		*	*
88. ——— <i>æquilateralis</i> , Brady .....	*		*		*	*
89. <i>Orbulina universa</i> , d'Orb., sp. ....	*		*		*	*
90. <i>Pullenia spheroides</i> , d'Orb., sp. ....			*		*	*
91. ——— <i>quinqueloba</i> , Reuss .....			*		*	*
92. <i>Spheroidina bulloides</i> , d'Orb. ....	*		*			
93. <i>Cymbalopora poeyi</i> , d'Orb., sp., var. ....	*					
94. <i>Discorbina globularis</i> , d'Orb., sp. ....		*		*	*	*
95. ——— <i>rosacea</i> , d'Orb., sp. ....		*				
96. ——— <i>vilardeboana</i> , d'Orb., sp. ....				*		
97. ——— <i>orbicularis</i> , Terquem., sp. ....				*		
98. ——— <i>bertheloti</i> , d'Orb., sp. ....				*	*	*
99. ——— <i>rareseens</i> , Brady .....		*				
100. <i>Planorbulina mediteranensis</i> , d'Orb. ....				*		
101. ——— <i>acervalis</i> , Brady .....		*				

Table of Distribution (continued).

	I. 940 fths.	II. 31 fths.	IV. 260 fths.	VI. 47 fths.	VII. 43 fths.	VIII. 40 fths.
102. <i>Truncatulina lobatula</i> , <i>W. &amp; J.</i> , sp. ....		*	*	*	*	*
103. ——— <i>variabilis</i> , <i>d'Orb.</i> .....			*			
104. ——— <i>mundula</i> , n. sp. ....			*			
105. ——— <i>reticulata</i> , <i>Czj.</i> , sp. ....		*				*
106. <i>Anomalina ariminensis</i> , <i>d'Orb.</i> , sp. ....	*		*	*	*	*
107. ——— <i>ammonoides</i> , <i>Reuss</i> , sp. ....	*		*			
108. <i>Pulvinulina elegans</i> , <i>d'Orb.</i> , sp. ....	*					*
109. ——— <i>schreibersii</i> , <i>d'Orb.</i> , sp. ....				*	*	
110. ——— <i>menardii</i> , <i>d'Orb.</i> , sp. ....	*		*	*		*
111. ——— <i>tumida</i> , <i>Brady</i> .....	*		*			*
112. ——— <i>crassa</i> , <i>d'Orb.</i> , sp. ....	*					
113. ——— <i>michelini</i> , <i>d'Orb.</i> , sp. ....			*		*	*
114. ——— <i>oblonga</i> , <i>Will.</i> , sp. ....					*	*
115. <i>Rotalia soldanii</i> , <i>d'Orb.</i> .....	*					
116. <i>Gypsina globulus</i> , <i>Reuss</i> , sp. ....		*				
117. ——— <i>inherens</i> , <i>Schultze</i> , sp. ....		*				
118. <i>Noniouna depressula</i> , <i>W. &amp; J.</i> , sp. ....			*			
119. ——— <i>exponens</i> , n. sp. ....	*					
120. ——— <i>umbilicatala</i> , <i>Montag.</i> , sp. ....		*	*		*	*
121. ——— <i>scapha</i> , <i>F. &amp; M.</i> , sp. ....			*			*
122. <i>Polystomella striatopunctata</i> , <i>F. &amp; M.</i> , sp. ....						*
123. ——— sp.? .....				*		
124. <i>Amplistegina lessonii</i> , <i>d'Orb.</i> .....	*	*				

NOTE.—Species not figured in the Plates.

22. *Psammospæra fusca*, *Schulze*.  
 27. *Haplophragmium emaciatum*, *Brady*.  
 33. *Trochammina squamata*, *J. & P.*  
 41. *Gaudryina siphonella*, *Reuss*.  
 49. *Bulimina pupoides*, *d'Orb.*  
 50. *Virgulina schreibersiana*, *Czj.*  
 51. *Bolivina punctata*, *d'Orb.*  
 52. ——— *plicata*, *d'Orb.*  
 58. *Lagena globosa*, *Montagu*, sp.

63. *Lagena lævigata*, *Reuss*, sp.  
 87. *Globigerina sacculifera*, *Brady*.  
 88. ——— *æquilateralis*, *Brady*.  
 95. *Discorbina rosacea*, *d'Orb.*  
 96. ——— *vilardeboana*, *d'Orb.*  
 99. ——— *rareseens*, *Brady*.  
 111. *Pulvinulina tumida*, *Brady*.  
 112. ——— *crassa*, *d'Orb.*  
 115. *Rotalia soldanii*, *d'Orb.*

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## PLATE XLVII.

CHART, showing the Track of H.M. Steam Surveying-ship 'Plumper' over the Victoria Bank (Abrohlos Bank).